CITY COUNCIL
PLANNING AND COMMUNITY DEVELOPMENT
COMMITTEE MINUTES

December 11, 2009

The City Council Planning and Community Development Committee of the City of Norman, Cleveland County, State of Oklahoma, met at 8:00 a.m. in the Conference Room on the 11th day of December, 2009, and notice and agenda of the meeting were posted in the Municipal Building at 201 West Gray and the Norman Public Library at 225 North Webster 48 hours prior to the beginning of the meeting.

PRESENT:	Councilmembers Atkins, Griffith, and Chairman Butler
ABSENT:	Councilmember Cubberley
OTHERS PRESENT:	Mayor Cindy Rosenthal Councilmember Dillingham Ms. Karla Chapman, Administrative Technician III Mr. Mark Daniels, Utilities Engineer Mr. Ken Komiske, Director of Utilities Mr. Steve Lewis, City Manager Mr. Blaine Nice, Assistant City Attorney Ms. Mary Clyburn, Carollo Engineers

DISCUSSION REGARDING LONG TERM WATER SUPPLY PLANNING AND RECLAIMED WATER OPTIONS.

Mr. Ken Komiske, Director of Utilities, provided an overview of the Regional Raw Water Supply Study for Central Oklahoma. He said the Norman Utilities Authority (NUA) completed a Strategic Water Supply Plan in 2001 which estimated the annual average and peak day demands for the City through the year 2040. He said the City has made significant strides in reducing peak day demand by reusing wastewater effluent and shedding non-potable users and conservation; however, the long term outlook will still require additional water supply to accommodate the growing community.

Mr. Komiske said in 2009, Norman joined other regional municipalities in the development of the 2009 Regional Water Supply Plan for Central Oklahoma and updated the annual average day water demand projections for the current service area to determine the necessary raw water supply augmentation for the entire region. Key findings of the study were as follows:

- Projected demands for the region exceed the sustainable yields of the potential source waters in Central Oklahoma.
- To obtain suitable supply for the region, additional raw water supply from the Kiamichi River Basin must be obtained through construction of a 105 mile pipeline and pump station, in parallel with the existing 60-inch Atoka pipeline. Additional pipelines/pump stations will be necessary to obtain additional water rights from Sardis Lake and the Kiamichi River basin
- The Draper Water Treatment Plant would be expanded to treat SE Oklahoma water supply and deliver finished water to the Norman distribution system through a new finished water line to satisfy peak day demands of approximately 47 million gallons per day (mgd).
- The total capital cost for the project allocated to the City of Norman is approximately $360 million.

Mr. Komiske said Staff is currently working on a Trust Formation (TF) with surrounding communities. He said if Norman decides to buy into the Trust, the existing Oklahoma City pipeline will run out of capacity in 2020 and the Trust will need to buy additional water supplies or rights at that time. Mr. Komiske said Norman has three options to choose from and all are workable, as well as feasible. He said past discussions referenced capital costs, but operational costs also need to be assessed when considering all options. He suggested taking the options to the community, in the form of a public meeting, so as to educate the citizens and gather their input. He said Council would also need to consider the three alternatives, take into account the public's input, and decide which would be best for Norman.

The three options include:

- Scenario 1 – SE Oklahoma Supply with Current Regulatory Climate: This scenario involves the use of water from SE Oklahoma to augment the existing water supply and expands the capacity of water treatment to satisfy population growth under the current regulatory climate.

- Scenario 2 – SE Oklahoma Supply with Increased Regulation: This scenario involves the use of water from SE Oklahoma to augment the existing water supply and expands the capacity of water treatment to satisfy population growth. It also involves additional costs for wastewater treatment facilities required to satisfy more restrictive discharge limits. More restrictive discharge limits are expected in Oklahoma and surrounding regions if the trend towards implementation of regulations designed to reduce nutrient load (nitrogen and phosphorous) in the Mississippi River drainage basin continues.

- Scenario 3 – Reclaimed Water using Best Available Technologies (BET): This scenario involves the use of reclaimed water to augment the existing water supply. It includes the costs for both expansion of the wastewater treatment to satisfy population growth and utilize the best available technology to produce an effluent than can be certified for augmentation of the current water supply. Currently not permitted in the State of Oklahoma for drinking water.

Mr. Komiske said cost categories were established for scenarios one and two, in reference to Sardis debt resolution; source alternatives capital; raw water transportation; water treatment; water delivery; and possible operations costs. He said Staff concluded a 90 inch diameter parallel Atoka pipeline would cost approximately $1 billion, based on the raw water transportation costs for river crossings, pump stations, and alignment conditions. The four source water alternatives and planning level costs for each include: Lake Sardis to Atoka - $348 million; Moyer's Crossing to McGee Creek to Atoka - $312 million; HWY 3 to McGee Creek to Atoka - $408 million; and Hugo to McGee Creek to Atoka - $456 million. Mr. Komiske provided capital cost summaries for each of the water alternatives and said Moyer's Crossing would be the most feasible stating Norman's costs would be approximately $360 million.

Mr. Komiske said if Norman chose to pump water from SE Oklahoma to augment Norman's existing water supply as discussed in scenario one, with Oklahoma City treating the water from Lake Draper, Norman's cost would be approximately $360 million and the cost includes the pipeline, pumping the water from Lake Draper to Norman, and upgrading the WTP. He said if Norman chose the re-use alternative, the total cost would be approximately $332 million which includes upgrades to the existing WTP, new future WTP to meet peak demands, upgrades at existing WWTP, and a new future WWTP.

Mr. Komiske introduced Ms. Mary Clyburn, Regional Manager with Carollo Engineers and said she has worked on several re-use projects around the country, to include Dallas, Texas, and Orange County, California. She said Dallas is constructing a 60 mgd pump station that will take the effluent from their south WWTP and pump it north into Lake Hubbard, which is one of the major water reservoirs for Dallas. She said Dallas will be providing a lower level of treatment than what is being proposed for Norman. She said Dallas will be using wetlands to try to remove the nutrients down to levels they believe will be acceptable.

Ms. Clyburn said with the state of today's science, Carollo believes water can be treated to satisfactory standards as there has been a lot of re-use research in the industry, not only by the primary research groups and universities, but by the Water Environment Research Federation (WERF), the Water Research Foundation (WRF), and the Water Re-Use Association (WRA). She said each of these groups are funding major research into the issues, which include how to treat the water suitable for re-use, confirming the issue of toxicity or health effects, and how to present the information to the community. The successful projects are those who present the options to the community early in the process and let the stakeholders participate in the decision making process.

Ms. Clyburn said an example of augmentation is the release of 150 mgd of highly treated reclaimed water from the Las Vegas Valley into Lake Mead, Nevada. She said the water mixes within the lake and other water sources and becomes the drinking water supply for millions. She said this project is the closest in the country to direct re-use and is the same technology Carollo has costed out for Norman. She said for Norman, the following assumptions

were utilized in developing the order of magnitude cost opinions for the option to augment Lake Thunderbird supply with reclaimed water:

- Reclaimed water must satisfy State of California Title 22 filtration and disinfection requirements for beneficial use. Sand filtration and high level disinfection are the current standard, but the tertiary treatment processes are a step higher, utilizing membrane filtration and ozone.
- Reclaimed water must satisfy total nitrogen and phosphorous limits established by the State of Kansas, Tier 3, Limits of Technology of 3.0 mg/L and 0.3mg/L, respectively. It is anticipated that Oklahoma Department of Environmental Quality (ODEQ) will follow the anti-degradation policy implemented by the State of Kansas and the Environmental Protection Agency (EPA) Region VII. It is anticipated that Lake Thunderbird will be classified under this system as a Tier 2/2 water supply because of its recreational use and source of drinking water supply.
- Based on historical data from similar modifications to existing WWTP facilities operating under similar permitting conditions, the order of magnitude capital costs opinions were developed for the production of reclaimed water from the existing Norman WWTP.
- Use of membranes and ozone for treatment of the reclaimed water filters destroys nearly all wastewater derived pollutants and has been shown to produce water quality better than EPA drinking water standards. To assist in overcoming public perception regarding indirect use of reclaimed water, some modifications at the WTP will be necessary to incorporate advanced oxidation and adsorptions of micro constituents that are present in the current surface water supply.
- The order of magnitude cost opinions do not include the following costs: collection system expansion; creation of additional storage at Lake Thunderbird, if necessary; creation of blending facilities at Lake Thunderbird for blending re-use quality water with Lake Thunderbird; expansion of raw water delivery system from Lake Thunderbird to existing or future regional WTP; expansion of distribution system for transmission of finished water to future customers; operations, i.e., energy, materials, labor, etc., and maintenance costs for future facilities; marketing and public relations costs; and legal, finance, engineering, or administrative costs.

Ms. Clyburn said Carollo Engineers has provided testing on a project in Florida demonstrating the effluent has no measurable impacts on the fish populations in Lake Mead and the belief is such that the fish and aquatic species are more readily impacted by pharmaceuticals and pollutants, than human population. She said time will tell, but this is what science is indicating right now. Mayor Rosenthal asked what period of time the research covered and Ms. Clyburn said they were not extended periods of time and most research projects are for limited periods. She said it is known that standard effluent, like what is being produced at Norman's WWTP, will impact the fish population. She said in previous studies, higher and higher levels of treatment were used, in order to find the treatment level needed where the fish did not show measurable impacts.

Mayor Rosenthal said she has been told the science is very conditional in this area and knowing what the impacts are particularly in the pharmaceuticals, personal care products, and hormone injected products. She felt there may be some in the community who feel re-use is a new alternative and the testing is not conclusive. Ms. Clyburn felt strategies can be developed to treat whatever may be detected. She said there is no question the pharmaceuticals and personal care products may have impacts that may not be known for generations. These are valid concerns and that is why she believes the decision making process needs to involve the community.

Councilmember Butler asked what is known about the current advanced treatments and how much of the pharmaceuticals and hormones are taken out of the effluent. Ms. Clyburn said the membrane treatment has been developed for a long time and is a fairly well demonstrated and proven technology. She said what really has changed is the application of the membrane technology on a large scale to use in water and wastewater facilities. Industrial practices deal with very specific compounds; therefore, the technology can be extremely focused, becoming more cost effective. Ms. Clyburn said applying the technology has only been around the last 20 years.

Councilmember Griffith asked how effective Norman's present treatment method was at removing pharmaceuticals and personal care products. Mr. Komiske said an ozonation process at the WTP will break down the pharmaceuticals and personal care products. Councilmember Griffith said the re-use of effluent from the WWTP

produced quality water better than EPA drinking water standards and asked if it was necessary to pump it to Lake Thunderbird, contaminating the re-use with pollutants, only to pump back to the WTP to be treated again to remove the pollutants. He asked whether a direct connection from the WWTP to the WTP would be more efficient. Ms. Clyburn said there is not a city in the country currently doing a direct connection, but felt technology will eventually allow this at some point in the future. She said the fish and aquatic species will probably require a higher level of treatment than the current drinking water standards and the treatment at the WWTP is probably to low for what is needed to meet the discharge standards into Lake Thunderbird.

Councilmember Butler asked Staff about comparative operating costs of the three scenarios, to include Norman's share of pumping water from Lake Sardis and the depreciation on the 90 foot Atoka pipeline project. Mr. Komiske said Staff can determine the operating costs, in terms of electric, for the micro filtration and ozone processes, and compare to costs for the Atoka pipeline. He said Staff already knows pumping 600 feet up and 100 miles on the Atoka pipeline will be about $0.80 per 1000 gallons.. Mr. Komiske said re-use is not currently permitted in Oklahoma, but ODEQ has discussed re-use. He said the treatment levels as proposed for Norman are based on California standards and Texas and Nevada are not using treatment levels to this degree.

The Committee asked Staff to bring back operating cost comparisons versus the Norman's shared cost of the Atoka pipeline.

Councilmember Griffith requested Staff compare the State of California Title 22 filtration and disinfection requirements versus Texas requirements, in order to find a middle ground.

Councilmember Butler requested clarity on the roles of the Oklahoma Water Resource Board (OWRB), the Oklahoma Department of Health, and any other regulatory department's role in the re-use alternative process.

Mayor Rosenthal felt the use of wetlands is a good option and asked Staff to determine the amount of acres the City would need to purchase.

Councilmember Butler requested information on the disposal procedures if using a membrane process that would filter out pollutants.

Items submitted for record

1. Memorandum dated December 2, 2009, from Mr. Kenneth Komiske, Director of Utilities, to Mr. Steve Lewis, City Manager
2. Letter dated November 30, 2009, from Mr. Thomas O. Crowley, P.E., Carollo Engineers, P.C., to Norman Utilities Authority, attention Mr. Ken Komiske, Director of Utilities
3. PowerPoint presentation entitled, *"Regional Raw Water Supply Study for Central Oklahoma"*

The meeting adjourned at 9:12 a.m.

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Attest: City Clerk Mayor